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GB 1025124 A GB 0699061 A

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(54) A holder

(57) A holder (10) for holding an article such as a sheet of plastics material. The holder (10) comprises a support member (12) defining an elongate channel (16) which can receive a portion of the article. The holder also comprises a resilient elongate securing member (14) adapted to be received tightly in the channel, whereby when said portion of the article is received in the channel, the securing member can also be received therein to secure the article to the holder.

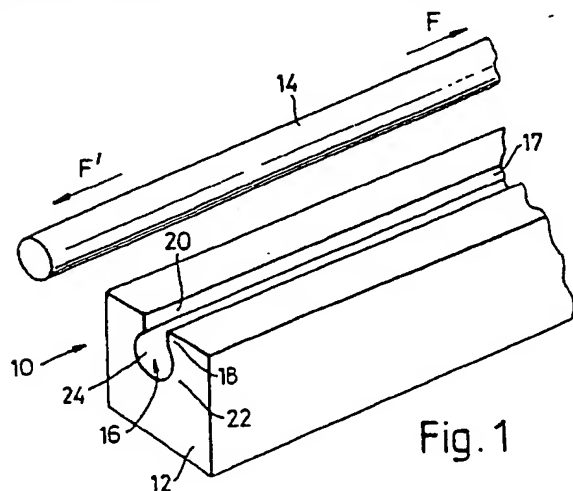


Fig. 1

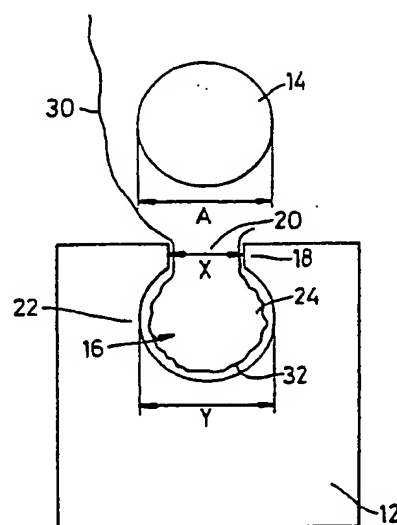
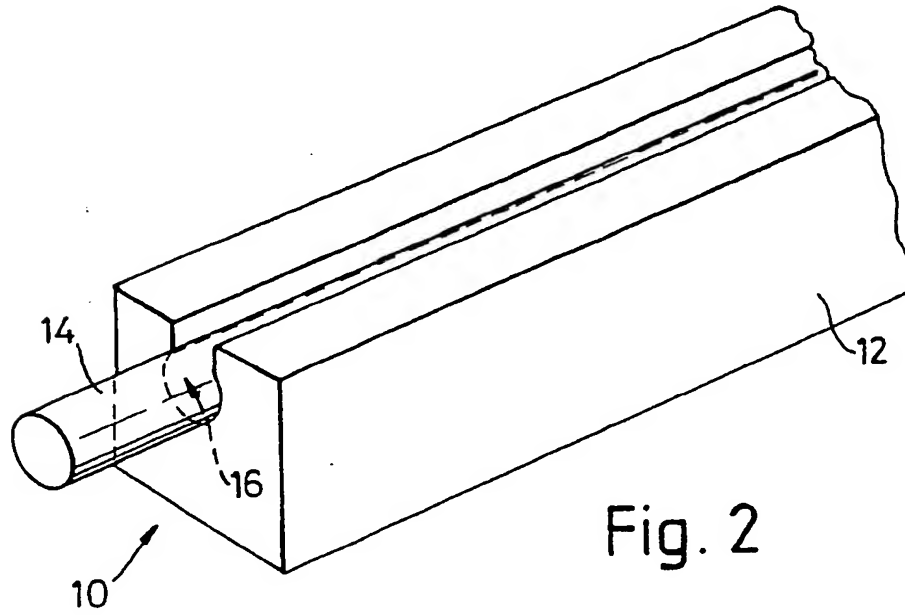
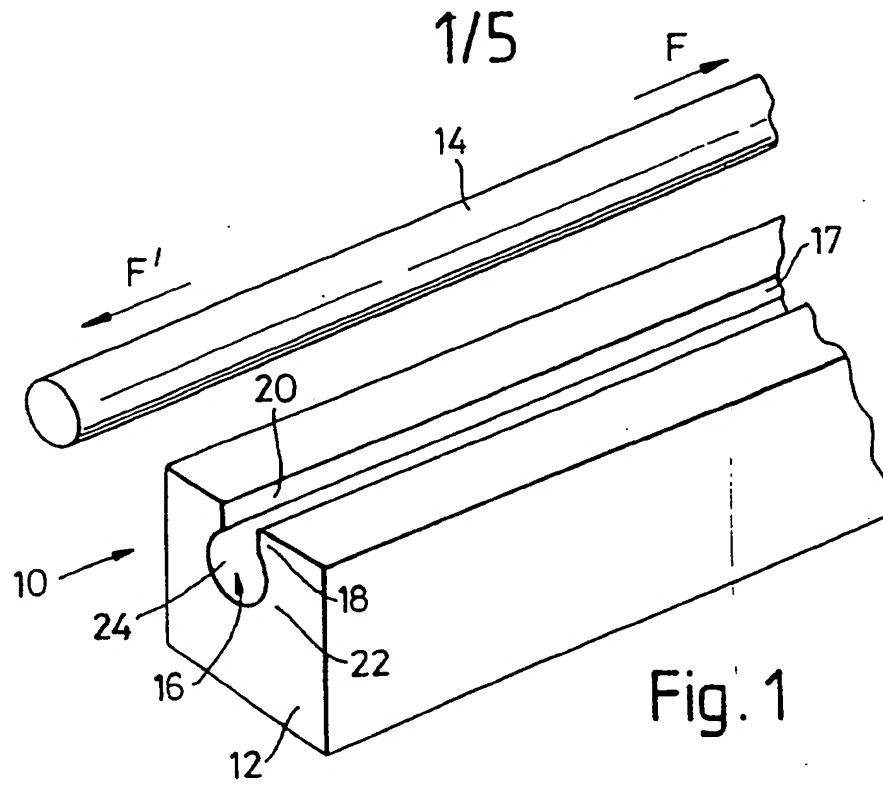
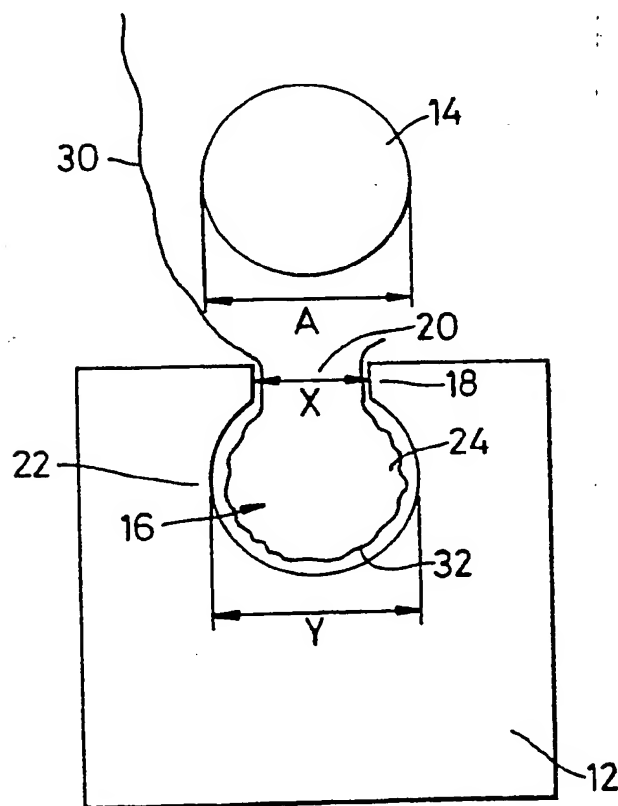
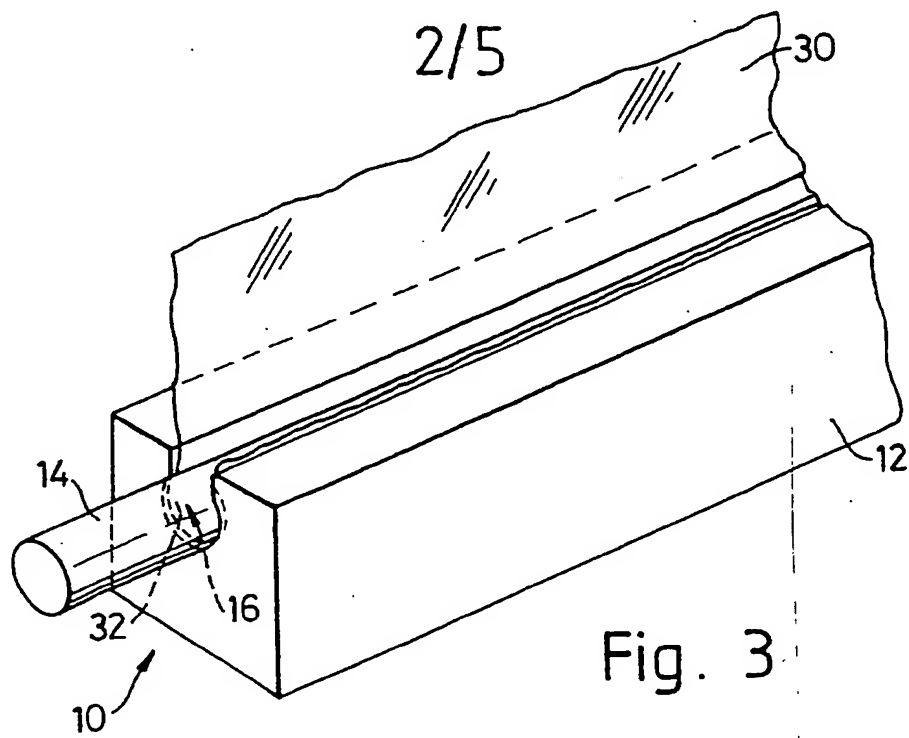


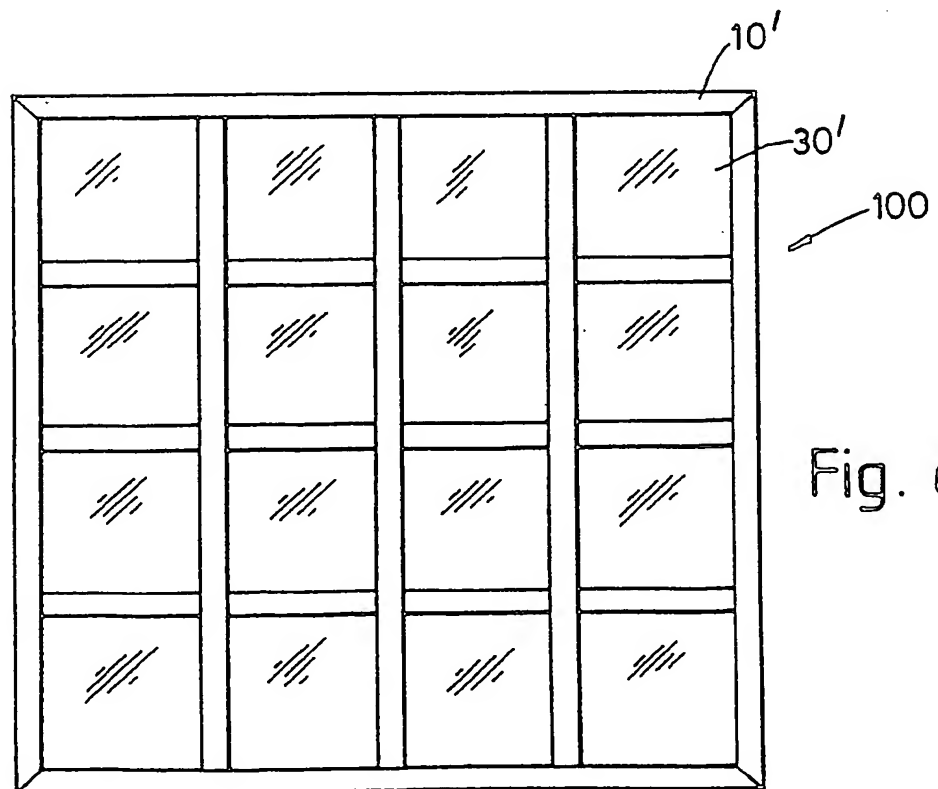
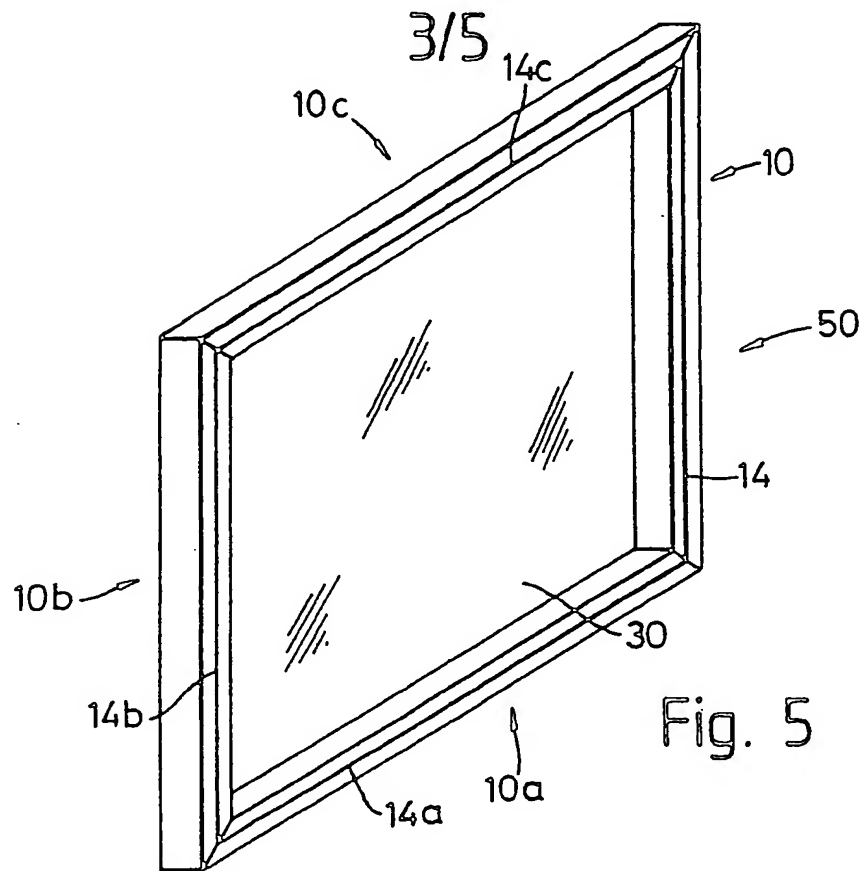
Fig. 4

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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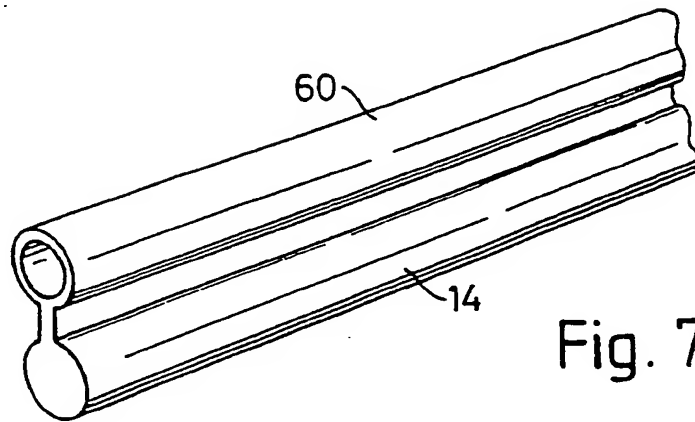


Fig. 7

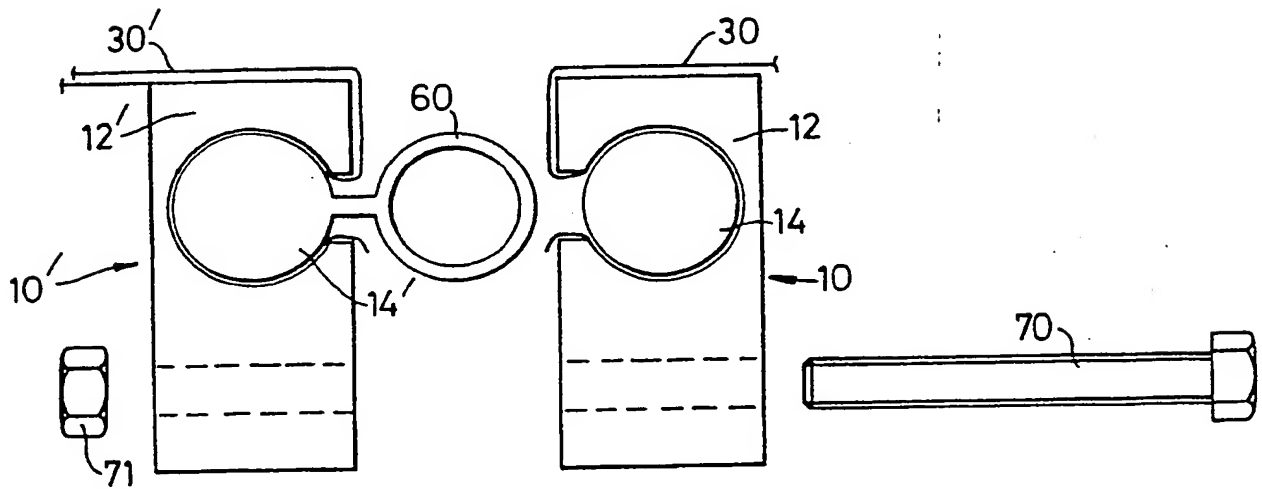


Fig. 8

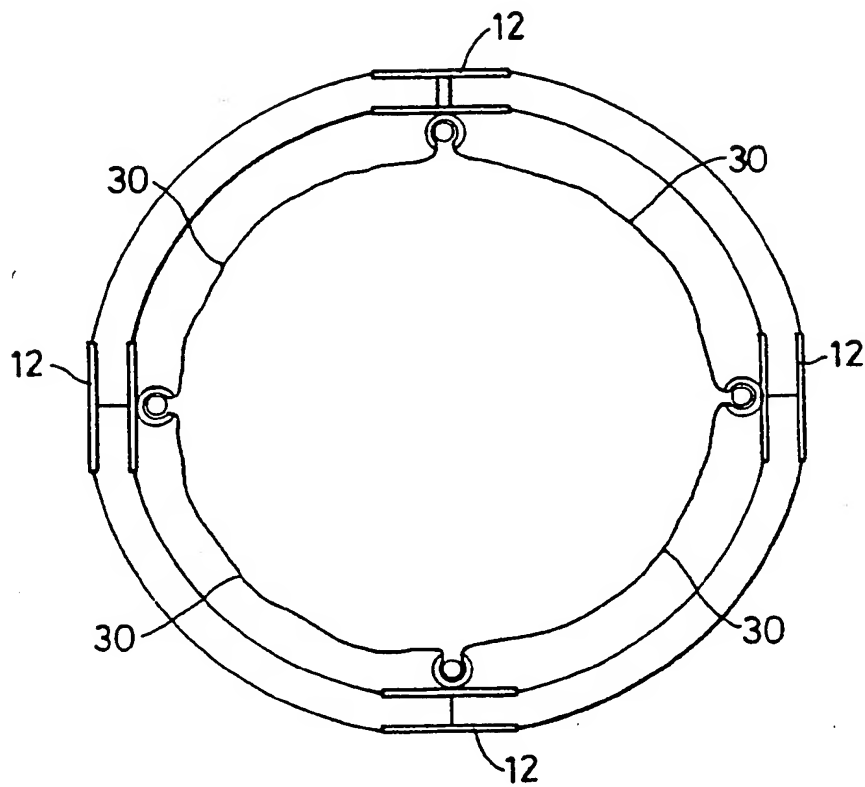


Fig. 9

A HOLDER

This invention relates to a holder.

Holders for holding various articles such as sheets of plastics materials or lengths of cord and the like are well known in the art. However, such holders are only useful for one particular application and it is necessary to provide different types of holder to hold different articles and for different purposes. This can usually lead to an increase in cost.

It is an object of this invention to provide an improved holder.

According to this invention there is provided a holder for an article, the holder comprising a support member defining an elongate channel which can receive a portion of the article, and a resilient elongate securing member adapted to be received tightly in the channel, whereby when said portion of the article is received in the channel, the securing member can also be received therein to secure to article to the holder.

The support member may be elongate and the channel may extend the length of the support member. The channel may have an opening which may also extend the length of the support member.

The support member defining the channel may comprise first and second channel defining portions. the first channel defining portion, which may define the opening of the channel, may also define a first part of the channel so that the width of the channel at said first channel defining portion is less than a first dimension of the securing member, said first dimension of the securing member being perpendicular to the length thereof.

The second channel defining portion of the support member may define a second part of the channel communicating with the first part of the channel. The second part of the channel may have a first dimension perpendicular to the length of the channel. The first

dimension of the second part of the channel is substantially equal to or slightly less than the first dimension of the securing member. In a preferred embodiment, the first dimension of the second part of the channel is approximately four fifths of the first dimension of the securing member.

In a preferred embodiment, the securing member is cylindrical and may have a substantially circular cross-section and the second part of the channel may be substantially circular in cross-section and may communicate with the first part of the channel. In this embodiment, the diameter of the securing member constitutes the first dimension thereof and the diameter of the second part of the channel constitutes the first dimension thereof.

Articles suitable for use with the holder may comprise articles made of a flexible material. Examples of such suitable articles are sheets of flexible plastics materials, lengths of cord and string and the like.

The securing member may be such that when opposed forces are applied thereto to cause the securing member to stretch along the length thereof, the diameter of the securing member is decreased.

In order for the securing member to be received in the channel, the securing member may be disposed at the opening of the channel. A force may then be applied to the securing member to cause the securing member to stretch along the length thereof and to cause the diameter thereof to decrease so that the securing member can be introduced into the first part of the channel. The securing member may then be passed through the first part of the channel to be received in the second part thereof. When the securing member reaches the second part of the channel, the force applied to stretch the securing member can be released to return the securing member to its original diameter.

Two or more holder may be attached together by attaching means. Any suitable attaching means may be used, for example a nut or a bolt.

Where two or more holders are attached together as aforesaid, one or more joints are formed between the holders. Sealing means may be provided to seal the or each joint. The or each sealing means may comprise a gasket, which may be formed of any suitable material, for example rubber.

The holder is particularly suitable for providing a fluid tight seal. When the article to be held is a sheet of plastics material the securing member can provide a fluid tight seal between the sheet and the holder.

The holder may be of any shape which is appropriate for the use to which it is to be put.

Reference is now made to the accompanying drawings, in which:-

Figure 1 is a perspective view of a portion of a holder according to this invention showing the securing member before it is received in the channel;

Figure 2 is a perspective view of a portion of a holder similar to Figure 1 but with the securing member received in the channel;

Figure 3 is a perspective view of a holder according to this invention which is shown holding an article;

Figure 4 is a front view of the holder shown in Figure 3 but with the securing member removed from the support member;

Figure 5 is a perspective view of a frame member comprising a plurality of holders;

Figure 6 is a top view of a roof or a wall manufactured from a plurality of frame members;

Figure 7 is a perspective view of a securing member having a gasket extension.

Figure 8 is a section view of two holders to be attached together showing a securing member having a gasket extension; and

Figure 9 is a plan view of a container showing vertically arranged holders for forming a lining for the container.

Referring to the drawings, a holder is shown, generally designated 10. The holder 10 comprises an elongate support member 12 and a resilient elongate securing member 14 which can be formed of rubber, such as nitrile rubber, or other suitable material.

The support member 12 defines an elongate channel 16 having an opening 17 which extends the length of the support member 12. A first channel defining portion 18 of the support member 12 defines a first part 20 of the channel 16. The first part 20 of the channel 16 also defines the opening 17. A second channel defining portion 22 of the support member 12 defines a second part 24 of the channel 16. The second part 24 of the channel 16 communicates with the first part 20 of the channel 16.

The securing member 14 is cylindrical in configuration and has a circular cross-section with a diameter A (see Figure 4). The first part 20 of the channel 16 has a width X and the second part thereof has a diameter Y (see Figure 4).

The diameter A of the securing member 14 is greater than the width X of the first part 20 of the channel 16, and the diameter A is substantially equal to the diameter Y of the second part 24 of the channel 16.

In order for the securing member 14 to be received in the channel 16, forces are applied to the securing member 14 in the directions indicated by the arrows F, F'. The forces F, F' stretch the securing member 14 along its length which causes the diameter A thereof to decrease. By decreasing the diameter A in this way, the securing member 14 can then be received in the first part 20 of

the channel 16. The securing member 14 is then passed through the first part 20 of the channel 16 to the second part 24 thereof.

When the securing member reaches the second part 24 of the channel 16, the force F, F' is then released to cause the diameter of the securing member 14 to return to its original size. This secures the securing member 14 within the channel 16.

Figure 3 shows the holder 10 holding an article in the form of a sheet 30 of a plastics material. the sheet 30 is secured to the holder 10 by the securing member 14.

In order to secure the sheet 30 to the holder 10 as shown in Figure 3, the securing member 14 is first removed from the channel 16. A portion 32 (see Figure 4) of the sheet 30 is then disposed in the channel 16 and the operation described above for receiving the securing member 14 in the channel 16 is repeated. Thus, the portion 32 of the sheet 30 is held between the securing member 14 and the support member 12.

It has been found that, by securing the sheet 30 to the holder 10 as described above, the sheet 10 can become puckered and wrinkled. This can be prevented by the use of a suitable lubricant, for example a detergent such as washing up liquid.

This invention can be used in many applications. For example, in Figure 5 a frame 50 is shown comprising four holders 10, 10a, 10b and 10c. A sheet 30 of plastics material is held between the four holders 10, 10a, 10b and 10c. Four securing members 14, 14a, 14b and 14c secure the sheet 30 to the holders 10, 10a, 10b and 10c respectively.

The frame member 50 can be used for glazing window. By making the holders 10, 10_a, 10_b and 10_c of desired lengths, the frame member 50 can be made to any desired shape to fit any shape of window, for example for double glazing.

This invention also has many other uses. Figure 6 shows a roof or a wall 100. The roof or wall 100 has, several members 50 as described above joined together. In this example, the frame members 50 would each be smaller in area than the frame member 50 described above for glazing.

The roof or wall 100 comprises a plurality of holders 10' which hold a plurality of sheets 30' of a plastics material. The sheets 30' can be of an opaque material.

Each of the holders 10' can have a channel 16 on opposite sides of the support member 12. Two sheets 30 of the plastics material can be held in the channels opposite sides of the support member 12. This provides a double layer of plastics material for insulation purposes.

It will be appreciated that the holder can be used for many purposes where it is necessary to provide a cover for an item. For example, for storage purposes, a frame member 50 as shown in Figure 5 can be attached around the rim of a container and the sheet 30 can be stretched over the top of the containers.

In order to secure adjacent frame members 50 together to form a sealed joint, a gasket extension 60 to the securing member can be provided (see Figures 7 and 8) made out of a suitable resilient material can be used. An example of such a resilient material is rubber.

As shown in Figure 8, the securing member 14' having the gasket extension 60 thereon and used to secure a sheet 30' to support member 12'. Similarly, after securing member 14 is used to secure a sheet 30 to the support member 12.

The support members 12 and 12' are attached together by means of a nut and a bolt 70, 71. The gasket extension 60 then engages the securing member 14 in order to provide a seal along the securing member 14.

Other examples of the uses to which the holder can be put are to term seals on display cases, for example specimen cabinets and drawers. A frame member can be disposed around the edge of specimen cabinet or drawer and a sheet can be secured to the support member all around the edge of the specimen cabinet or drawer. This example, is useful in cabinets for entomological displays which have to be kept free from damp. It will be appreciated that other types of display could be made.

Another example of the use of the holder is for holding down table cloths. A frame member could be fitted around the edge of a table and a sheet could be placed on the table and the edges of the sheet could be held in place by the frame member.

The holder can also be used for sealing containers such as tea chests when it is necessary to keep them free from damp. This can be done by fitting a frame member around the top of the container and a sheet could be held by the frame member over the top of the container to seal it.

A similar holder on cars and other vehicles would provide the means for enabling a temporary windscreen in the form of a sheet of transparent plastics material to be attached thereto.

The holder can also be used to provide a lining for bins for storing agricultural produce (see Figure 9) the support members 12 can be disposed vertically in equal

spaced relationship to each other within the bin as shown in Figure 9 sheets 30 of a suitable plastics material can then be secured to the support members in order to provide a lining within the bin.

Other examples of the uses to which the holder can be put are for securing bin liners, as a support for windbreaks. It can also be used in swimming pools, fish ponds and in water tanks.

CLAIMS

1. A holder for an article comprising a support member defining an elongate channel which can receive a portion of the article, and a resilient elongate securing member adapted to be received tightly in the channel, whereby when said portion of the article is received in the channel, the securing member can also be received therein to secure the article to the holder.
2. A holder according to Claim 1 wherein the support member is elongate, the channel extends the length of the support member and the channel has an opening which also extends the length of the support member.
3. A holder according to Claim 2 wherein the securing member defining the channel comprises first and second channel defining portions the first channel defining portion which defines the opening of the channel also defines a first part of the channel so that the width of the channel at said first channel defining portion is less than a first dimension of the securing member, whereby the first dimension of the securing member is perpendicular to the length thereof.
4. A holder according to Claim 3 wherein the second channel defining portion of the support member defines a second part of the channel communicating with the first part of the channel; the second part of the channel having a first dimension perpendicular to the length of the channel, said first dimension of the second part of the channel being substantially equal to or slightly less than the first dimension of the securing member.
5. A holder according to Claim 4 wherein the securing member is cylindrical and has a substantially circular cross-section and the second part of the channel is substantially circular in cross-section whereby the diameter of the securing member constitutes the first

dimension of the securing member and the diameter of the second part of the channel constitutes the first dimension of the second part of the channel.

6. A holder according to Claim 5 wherein the securing member is such that when opposed forces are applied thereto to stretch along the length thereof the diameter of the securing member is decreased.

7. A holder according to Claim 6 whereby in order for the securing member to be received in the channel, the securing member is disposed at the opening of the channel and when a force is then applied to the securing member to cause the securing member to stretch along the length thereof and to cause the diameter thereof to decrease, the securing member can be introduced into the first part of the channel.

8. A holder according to Claim 7 whereby when the securing member reaches the second part of the channel, the force applied to stretch the securing member can be released to return the securing member to its original diameter.

9. A holder according to any preceding claim which can be attached to an adjacent holder by attaching means, whereby when said holder is attached to said adjacent holder a joint is formed between the holder and the adjacent holder and sealing means can be provided to seal the joint.

10. A holder according to Claim 9 wherein the sealing means comprises a gasket extension, extending from the securing means of said holder and said gasket extension being adapted to engage the securing member of said adjacent holder to form a seal therewith.

11. A frame member comprising a plurality of holders as claimed in any preceding claim attached together at the ends thereof to define an aperture therebetween whereby a sheet of plastics material can be held by said holders in said aperture.

12. A holder substantially as herein described with reference to and as shown in the accompanying drawings.

13. A frame member substantially as herein described with reference to and as shown in the accompanying drawings.